

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

Seppo Laine OY
Itämerenkatu 3 B
FI-00180 Helsinki
Finland

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing
(day/month/year)

14-10-2004

Applicant's or agent's file reference
SITE 9 PCT

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/FI2004/000224

International filing date (day/month/year)

13.04.2004

Priority date (day/month/year)

11.04.2003

International Patent Classification (IPC) or both national classification and IPC

C08G 77/20, C08G 77/04, H01B 3/46

Applicant

Silecs Oy et al

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☒ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further opinions, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/SE
Patent- och registreringsverket
Box 5055
S-102 42 STOCKHOLM
Facsimile No. +46 8 667 72 88

Authorized officer

Erika Stenroos/BS

Telephone No. +46 8 782 25 00

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/FI2004/000224

Box No. 1 Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/FI2004/000224

Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The question whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application

☐ claims Nos. _____

because:

☐ the said international application, or the said claims Nos. _____
relate to the following subject matter which does not require an international preliminary examination (*specify*):

☒ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. 1
are so unclear that no meaningful opinion could be formed (*specify*):

Present claim 1 relates to an extremely large number of possible compounds. In fact, the claim contains so many options, variables and possible permutations that a lack of clarity within the meaning of Article 6 PCT arises to such an extent as to render a meaningful search of the claims

.../...

☐ the claims, or said claims Nos. _____ are so inadequately supported by the description that no meaningful opinion could be formed.

☐ no international search report has been established for said claims Nos. _____

☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:

the written form	<input type="checkbox"/> has not been furnished
	<input type="checkbox"/> does not comply with the standard
the computer readable form	<input type="checkbox"/> has not been furnished
	<input type="checkbox"/> does not comply with the standard

☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-bis of the Administrative Instructions.

☐ See Supplemental Box for further details.

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/FI2004/000224

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of: BOX III.2

impossible.

Consequently, the search has been carried out for those compounds included in the application which appear to be clear, namely the compounds according to claims 59, 108 and 134.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/FI2004/000224

1005 Rec'd PCT/PTO 11 OCT 2005

Box No. IV Lack of unity of invention

1. ☒ In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has:
- ☒ paid additional fees
 - ☐ paid additional fees under protest
 - ☐ not paid additional fees
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is
- ☐ complied with
 - ☒ not complied with for the following reasons:

The International Search Authority considers that there are 3 inventions covered by the claims indicated as follows:

I: Claims: 1, 57, 59, 108, 134 and 160 are directed to a chemical compound and a method for making the chemical compound.

II: Claims 1, 10, 29, 41, 52, 53, 59, 68, 85, 99, 103, 104, 108, 113, 122, 127, 129, 130, 134, 139, 148, 153, 155 and 156 are directed to a poly(organo siloxane), an integrated circuit having a layer of poly(organo siloxane) and a computer comprising an integrated circuit with a poly(organo siloxane) layer.

III: Claim 164 is directed to a thin film comprising a composition obtained by hydrolyzing two different monomeric silicon compounds to form a siloxane material.

The ISA has carried out a partial search which relates to invention I mentioned above.

The applicant is invited to pay an additional fee for the inventions II and III as listed above.

Statement:

.../...

4. Consequently, this opinion has been established in respect of the following parts of the international application:
- ☐ all parts
 - ☒ the parts relating to claims Nos. invention I and II, see above

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/FI2004/000224

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: BOX IV

The present application has been considered to contain 3 inventions which are not linked in a permissible manner as required by PCT Rule 13.1 or 13.2:

See PCT Guidelines § 10.15;

"While a single set of independent claims according to on of the subparagraphs of paragraph 10.12 is always permissible, it does not require the International Authority to accept a plurality of such sets..."

Independent claims are permissible for two related articles, in this case a monomer and a polymer, however, it does not follow that, under paragraph 10.12, an applicant may include also, in the one international application, four additional independent claims: two claims for a process for the manufacture of the monomer and four claims for the use of a polymer in the computer industry.

Consequently, the (two) groups of inventions are not so linked as to fulfill the requirements for unity of invention as required by Rule 13.1, 13.2 and 13.3 PCT.

In the present application the invention number III is not linked to either invention I or II.

The applicant has paid one additional fee for the search of invention II.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/FI2004/000224

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	2-58, 61-63, 65-163	YES
	Claims	1, 59-60, 64	NO
Inventive step (IS)	Claims	2-58, 61-63, 65-163	YES
	Claims	1, 59-60, 64	NO
Industrial applicability (IA)	Claims	1-163	YES
	Claims		NO

2. Citations and explanations:

The following documents will be discussed:

D1: STN International, File CAPLUS, CAPLUS accession no. 1975:497451, Document no. 83:97451, Vaks, E. A. et al.: "Radiation-chemical synthesis of polyfluoroaromatic derivatives of silicones affected by accelerated electrons", & Zhurnal Obshchei Khimii (1975), 45(6), 1315-22

D2: STN International, file CAPLUS, CAPLUS accession no. 1979:420591, Document no. 91:20591, Novikov, S.S. et al: "Silicon-containing polycyclic hydrocarbons. I. Study of the alkylation of phenylchlorosilanes by 1-bromoadamantane", & Zhurnal Obshchei Khimii (1979), 49(4), 772-5

D3: Journal of the American Chemical Society, volume 91, no 6, 1969, March 12, R.A. Benkeser et al: "A New Method of Forming the Carbon-Silicon Bond. Reductive Silylation of Carbonyl Compounds" 1556-1557, see run 5

D4: Acta Chemica Scandinavica, volume 50, 1996, Tamio Hayashi: "Asymmetric Hydrosilylation of Olefins Catalyzed by MOP-Palladium Complexes", pages 259-266, see page 263, no. 14a

D5: US 6348241

Statement:

.../...

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/FI2004/000224

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: Box V

Claim 1 of the claimed invention describes a chemical compound of the general formula $R_1-R_2-Si-(X_1)_3$, wherein X_1 is a leaving group, R_2 is a cycloalkyl having from 3- 16 carbon atoms, an aryl having from 5-18 carbon atoms or a polycyclic alkyl group having from 7-16 carbon atoms, and R_1 is a substituent of R_2 selected from alkyl groups having from 1-4 carbon atoms, alkenyl groups having from 2-5 carbon atoms, alkylyl groups having from 2-5 carbon atoms, and aromatic groups having 5-6 carbon atoms, each of said groups being optionally substituted, and Cl and F.

According to what is known from D1-D3, the subject matter of claim 1 is previously known and therefore, this claim is not approved.

Claim 59 of the claimed invention describes a chemical compound of the formula $R_1-R_2-Si-(X_1)_3$, wherein X_1 is a halogen, acyloxy, alkyloxy or OH group, R_2 is an organic polycyclic or bridged ring structure with Si bound to carbon position 1, and R_1 is a substituent at position 3 or higher of R_2 selected from an alkyl group having from 1 or more carbon atoms, an alkenyl, an alkynyl, an acrylate, an aryl an alcohol, OH, H D, Cl, or F. According to claim 60, R_2 is an interlocking ringstructure with one of the rings having 6 carbons. According to claim 64, R_2 is an interlocking ring structure with 2 rings, a first ring having at least 4 carbons and a second ring having at least 6 carbons.

According to what is known from D4-D5, the subject matter of claims 59-60 and 64 is previously known and therefore, these claims are not approved.

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/FI2004/000224

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawing or on the question whether the claim are fully supported by the description, are made:

Claims 63, 128 and 161 are probably not correctly linked.